



US006411601B1

(12) **United States Patent**  
**Shaffer et al.**

(10) **Patent No.:** **US 6,411,601 B1**  
(45) **Date of Patent:** **Jun. 25, 2002**

(54) **SYSTEM AND METHOD FOR SECURING  
AVAILABLE COMMUNICATIONS  
NETWORK RESOURCES**

JP 11-308231 11/1999 ..... H04L/12/28  
WO WO 96/04743 2/1996 ..... H04M/3/42

#### OTHER PUBLICATIONS

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Copy of Search Report for GB Appln. No. 9929338.3; date search was completed: May 31, 2000.

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\* cited by examiner

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(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

#### (57) **ABSTRACT**

A system and a method for securing telecommunications resources include a resource requirements module which determines network resource requirements specified in call requests of telecommunications calls. In one embodiment, a resource availability monitor determines if the resource requirements exceed the available levels for at least two network resources. In another embodiment, the resource availability monitor determines if Digital Signal Processor (DSP) requirements in the call request exceed DSP availability. If the resource requirements exceed the resource availability at the time when the call request is received, a resource reservation mechanism places the call request into network resource queues for those network resources which are in short supply. When the call request reaches the front of one of the network resource queues, the resource reservation mechanism reserves the network resource for a predetermined time interval and determines whether all resource requirements for the call request can be satisfied. If so, the call is established. If any resource requirements cannot be satisfied within the predetermined time interval, the reserved resources are released to provide the next call request in the queue the opportunity to reserve the network resources. If all resource requirements are satisfied, a call setup subsystem establishes the call.

(21) Appl. No.: **09/212,337**

(22) Filed: **Dec. 15, 1998**

(51) Int. Cl.<sup>7</sup> ..... **G01R 31/08**

(52) U.S. Cl. .... **370/230; 370/352; 370/401;  
370/468; 709/229**

(58) Field of Search ..... **709/227, 229;  
370/230, 231, 232, 352, 353, 354, 355,  
356, 400, 401, 465, 468**

#### (56) **References Cited**

##### U.S. PATENT DOCUMENTS

5,315,586 A \* 5/1994 Charvillat ..... 370/230  
5,367,517 A \* 11/1994 Cidon et al. .... 370/230  
5,701,465 A \* 12/1997 Baugher et al. .... 370/231  
5,812,551 A 9/1998 Tsukazoe et al. .... 370/399  
5,940,479 A \* 8/1999 Guy et al. .... 370/522  
6,205,484 B1 \* 3/2001 Eriksson ..... 709/229

##### FOREIGN PATENT DOCUMENTS

GB 2 327 317 1/1999 ..... H04Q/3/00  
GB 2 331 659 5/1999 ..... H04L/12/56

**20 Claims, 4 Drawing Sheets**

